

PATENT APPLICATION  
DOCKET NO.: 200315309-1

**REMARKS**

Claims 1, 2, 4, 8, 16, 17, 19, 20, and 26-35 are currently pending, of which claims 1 and 16 are in independent form.

By the present response, claims 1, 4, 8, 16, 19, and 20 are amended, claims 3, 5 and 18 are canceled, and claims 26-35 are added. No new matter is added thereby. Support for the claim amendments and new claims can be found in the present patent application at, e.g., Paragraphs [0013]-[0015], *inter alia*.

Favorable reconsideration of the present patent application as currently constituted is respectfully requested.

**Regarding the Claim Rejections - 35 U.S.C. §102(b)**

Claims 1-5, 8 and 16-20 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,839,188 to Pommer (hereinafter the *Pommer* reference). Claims 3, 5 and 18 have been canceled by way of the present response and their rejection is therefore now moot. In connection with the remaining rejections, the Examiner commented as follows with respect to base claims 1 and 16 and with respect to dependent claims 3 and 18, the subject matter of which have been incorporated respectively into base claims 1 and 16:

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As to claims 1, and 16, Pommer discloses a printed circuit board (PCB) substrate and its method (10) as shown in figures 1-3, comprising:

first and second dielectric materials (dielectric layers 22, 32) associated with first and second current return layers (24, 34);

a signal path layer (26; 36) interposed between said first dielectric material and said second dielectric material; and

an adhesive layer (40) interposed between said first and second dielectric materials, said adhesive layer (40) being substantially coplanar relative to said signal path layer (26; 36).

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As to claims 3-5, 18-19, Pommer discloses said adhesive layer (40) comprises dielectric material selected from the group consisting of a two-sided adhesive tape, an adhesive film having a copper foil, an epoxy adhesive sheet, and an expanded polytetrafluoroethylene (BPTFE), see column 7, line 57 through column 8, line 54, said adhesive layer has a lower loss tangent than said first dielectric material and has a higher glass transition point than said first dielectric material.

Applicant respectfully traverses the foregoing §102(b) rejections and offers the following discussion as support. As defined by base claim 1, an embodiment of the present disclosure is directed to a printed circuit board (PCB) substrate that comprises, *inter alia*, an adhesive layer interposed between a first dielectric material and a second dielectric material,

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wherein the adhesive layer has a lower loss tangent than at least one of the first and second dielectric materials.

Similarly, as defined by base claim 16, an embodiment of the present disclosure is directed to a method for constructing a printed circuit board substrate that involves, *inter alia*, selecting an adhesive layer that has a lower loss tangent than a first and second dielectric materials used in the PCB, which materials sandwich the adhesive layer.

The *Pommer* reference is directed to an adhesive for a PCB, the adhesive containing gauge particles interspersed within a non-conductive thermosetting adhesive to provide mechanical separation between two dielectric substrates. *Pommer* notes that the non-conductive thermosetting adhesive can include polyimide, epoxy, butyrl phenolic, etc. See column 7, line 57 through column 8, line 8. The dielectric materials disclosed in *Pommer* include polyimide, polyester, PEN, polyetherimide, epoxy, ceramic, impregnated woven or non-woven glass. See column 7, lines 8-14. However, neither the cited excerpts nor other parts of *Pommer* appear to disclose that the adhesive embodiments have a lower loss tangent than the dielectric material used in the PCB substrate as currently claimed. In fact, *Pommer* does not provide any discussion, suggestion, or motivation with respect to the

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loss tangent of either the dielectric materials or the adhesive materials used in this reference. Further, although the Examiner asserts that *Pommer* demonstrates the claimed relationship between the loss tangent of the adhesive and the loss tangent of the dielectric material, it appears that the Examiner has presented no evidence that would support this assertion.

For at least the reasons discussed above, Applicant respectfully submits that the applied art of record neither anticipates nor suggests the features of base claim 1 and that claim 1 is therefore in condition for allowance. Base claim 16 is also distinguishable over the cited reference for the same reasons. Further, claims 2, 4 and 8 (dependent on base claim 1) and claims 17, 19 and 20 (dependent on base claim 16) are not anticipated or suggested by the applied art of record and are therefore in condition for allowance.

**Regarding the New Claims**

New claims 31-35 are dependent from base claim 1 and new claims 26-30 are dependent from base claim 16, each of which is distinguishable over the applied art as discussed above. Accordingly, these newly added dependent claims are not

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anticipated or suggested by the applied art of record and are  
therefore believed to be in condition for allowance.

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SUMMARY AND CONCLUSION

In view of the fact that none of the art of the record, whether considered alone or in combination discloses, anticipates or suggests the pending claims, and in further view of the above remarks and/or amendments, reconsideration of the Action and allowance of the present patent application are respectfully requested and are believed to be appropriate.

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Respectfully submitted,

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